

## ENHANCED COOLING APPARATUS AND METHOD FOR ROTATING MACHINERY

### Abstract

5 A rotating machine is disclosed that has a case with an exterior surface a  
pulley end, an opposite end, and an interior working chamber. A rotary shaft for  
rotation within the interior chamber between the pulley end and the opposite end.  
At least one machine component is supported for rotation on the rotary shaft. At  
10 least one air inlet and at least one air outlet are formed through the case. A first fan  
is supported for rotation on the rotary shaft within the interior of the case and is  
arranged for pulling air through the air inlet into the interior of the case and for  
pushing air out the air outlet from the interior of the case. A cowl is received over  
the opposite end of the case. The cowl defines a plenum between an interior surface  
15 of the cowl and the case and also defines an annular air opening around a perimeter  
of the cowl and the case. A second fan is positioned within the plenum wherein the  
plenum and second fan are arranged for assisting in moving air through the interior  
working chamber of the case opposite end and also for pushing air toward the case  
and exiting the plenum through the annular opening to pass back over the exterior  
20 surface of the case.